

Missouri



Long-Term Stewardship Site Highlights

Kansas City Plant

Major Activities - groundwater and surface water monitoring; institutional controls for soil contamination

Site Size - 56.4 hectares (141 acres)

Start-End Years - 2005/in perpetuity

Estimated Average Annual Cost FY 2005-2006 - \$1,334,000

Latty Avenue Properties

unknown

St. Louis Airport Site

unknown

St. Louis Airport Site Vicinity Properties

unknown

St. Louis Downtown Site

unknown

Weldon Spring Site Remedial Action Project

Major Activities - surface water and groundwater monitoring; disposal cell maintenance and monitoring; institutional controls

Site Size - 91.4 hectares (226 acres)

Start-End Years - 2003/in perpetuity

Estimated Average Annual Cost FY 2003-2006 - \$1,006,000

Westlake Disposal Site

Site Size - 81 hectares (200 acres)

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KANSAS CITY PLANT

1.0 SITE SUMMARY

1.1 Site Description and Mission

The Kansas City Plant is the U.S. Department of Energy's (DOE) main component fabrication plant, supporting multiple missions (defense, environmental, and others). The plant is part of the Bannister Federal Complex, a 120-hectare (300-acre) site approximately 19 kilometers (12 miles) south of downtown Kansas City, Missouri. DOE occupies about 56 hectares (141 acres) of this complex. The complex is zoned by local government for heavy industry. The surrounding area consists of single- and multiple-family residences, commercial establishments, industrial districts, and public-use lands.

The Kansas City Plant was built by the U.S. Navy during World War II to assemble engines for Navy fighter planes. Pratt-Whitney operated the plant from early 1943 until 1945. In 1947, Westinghouse began leasing the facility to the Fairfax Storage Company, which used part of the building as a warehouse for tires, raw rubber, sugar and lumber. Two years later in 1949, the Atomic Energy Commission (later known as the U.S. Department of Energy) asked the Bendix Corporation to take over part of the facility and begin building components for nuclear weapons. In 1993, DOE officially designated the Kansas City Plant as the consolidated site for all nonnuclear components for nuclear weapons. The plant, now under operation by Honeywell Federal Manufacturing & Technologies (FM&T), currently manufactures and procures electrical, electromechanical, mechanical, and plastic components.

LONG-TERM STEWARDSHIP HIGHLIGHTS

Major Long-Term Stewardship Activities - groundwater and surface water monitoring; institutional controls for soil contamination
Total Site Area - 56.4 hectares (141 acres)
Estimated Volume of Residual Contaminants - unknown
Long-Term Stewardship Start-End Years - 2005-in perpetuity
Average Annual Long-Term Stewardship Cost FY 2005-2006 - \$1,334,000
Landlord - U.S. Department of Energy, Office of Defense Programs

1.2 Site Cleanup and Accomplishments

Various spills and leaks from previous production activities have contaminated the soil, groundwater, and surface water at the Kansas City Plant. Because the site produced only nonnuclear components for nuclear weapons, no radioactive contamination is present at the site.

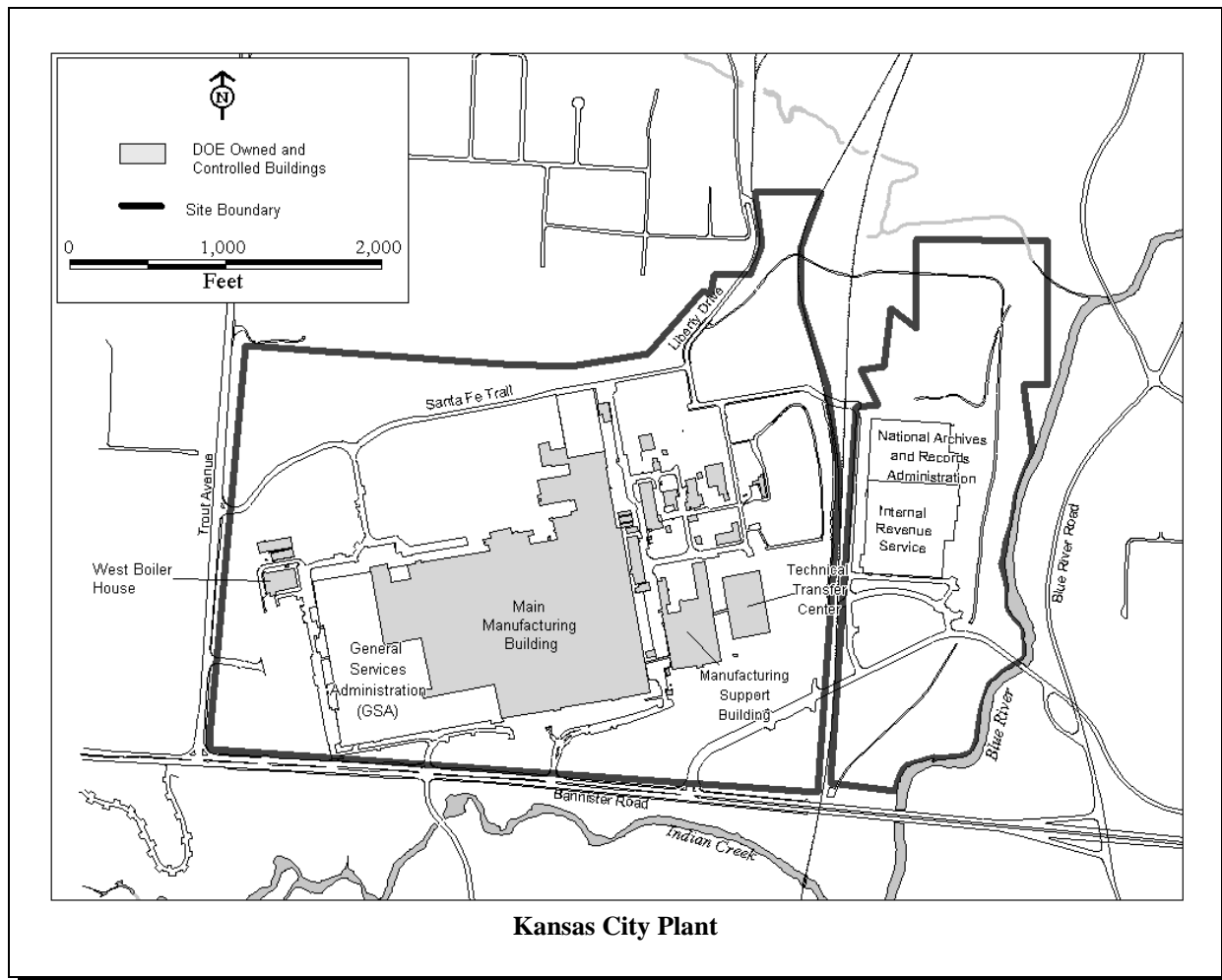
The soil is contaminated with polychlorinated biphenyls (PCBs), volatile organics, and petroleum hydrocarbons. The volatile organic contamination covers much of the site, while the polychlorinated biphenyl contamination is most highly concentrated near the solid-waste management units. The petroleum hydrocarbon contamination occurs at various locations throughout the site. The soil contamination represented a surface area of approximately 70,000 square meters (84,000 square yards, or 17 acres) of subsurface soil.

SITE ACCOMPLISHMENTS

- 42 of 43 release sites have been stabilized; and the Resource Conservation and Recovery Act (RCRA) Facility Investigation for the 43rd site (95th Terrace Site) is under Missouri Department of Natural Resources review

ANTICIPATED ACCOMPLISHMENTS BY 2006

- Complete the Corrective Measures Study to determine which cleanup method to use for the 95th Terrace Site
- Complete the Corrective Measures Implementation Design, which specifies construction details for cleanup of the 95th Terrace Site
- Continue groundwater treatment and monitoring activities, including well monitoring and maintenance, preparing regulatory reports, and ground water interceptor well design



Surface remediation, including soil removal, has been ongoing under a Consent Order Agreement with the U.S. Environmental Protection Agency (EPA) since 1990 and is expected to be completed by fiscal year (FY) 2004. The Consent Order Agreement was transferred from EPA to the Missouri Department of Natural Resources as a post-closure permit in 1999.

The volume of residual soil contamination is unknown. DOE expects that institutional controls will be the selected remedy in areas where soil contamination poses a minimal risk. No additional capping of contaminated soil areas is planned, as the majority of contamination is located underneath the facility. Two former waste water treatment lagoons have caps, requiring monitoring and maintenance.

Approximately 24 hectares (58 acres) of groundwater is contaminated with volatile organics and petroleum hydrocarbons. Engineered controls are used to prevent further contamination of the groundwater. DOE will continue to extract and treat groundwater contaminated with trichloroethylene (TCE) and its degradation products, 1,2-dichloroethylene (1,2 DCE), and vinyl chloride until maximum concentration limits (MCLs) are no longer exceeded. However, currently, there is no known, viable, cost-effective treatment method that will remove volatile organics to MCLs for the contamination under the buildings (in a tight silty clay soil). Technologies will continue to be evaluated for applicability to volatile organic contamination. The groundwater contamination by petroleum hydrocarbons, which are dense non-aqueous phase liquids (DNAPLs), is being cleaned up primarily through the use of innovative technologies.

Final cleanup levels for groundwater have not yet been determined. DOE plans to continue groundwater treatment and monitoring until it can be demonstrated in three consecutive years that MCLs are not exceeded or until the regulators agree to an alternative. Approximately 80 million liters (21 million gallons) of groundwater per year are treated. With current technologies and cleanup standards, groundwater treatment could continue for hundreds of years in order to achieve maximum contaminant levels. There is currently no designated use for the contaminated aquifer and none is predicted, as the city uses surface water sources for its drinking supply. Current groundwater treatment is limiting discharge of contaminants to the surrounding surface water.

Contamination also spilled into the storm drains affecting the Indian Creek and Blue River surface water and sediments. The surface water concentrations have typically been in the parts-per-billion range, when detected. Sediment concentrations on areas of the site have been around two parts per million. The State of Missouri has recently notified DOE that the discharge limit will be lowered to 0.5 parts per billion in the near future, possibly resulting in future remediation work. The contamination consists of PCBs spilled into a storm drain and residual contamination in the storm sewer. Water collected in one exterior sump onsite is treated for PCBs prior to being discharged to the sanitary sewer system. Several projects to reduce the concentrations were completed in the last 15 years, including lining of laterals and excavations at different areas of the site. These projects include the following:

Date	Project
1984	Six manholes modified to decrease amount of PCBs entering storm sewer.
1985	K lateral lined with Insituform.
1987	PCB-containing heat transfer oil and PCB-contaminated piping were removed from the two heat transfer systems, one of which was responsible for the 95 th Terrace spills.
1988	Four additional laterals were lined with Insituform; a corrugated metal pipe, which was coated with a PCB-containing material, was removed from part of the 002 system. Also in 1988, 1600 tons of 002 Raceway PCB-contaminated materials (soil, sediments, and concrete) were removed. This material had become contaminated as a result of a 1972 spill. Clean fill was used to return the area to grade, and a replacement concrete raceway from the outfall to Indian Creek was constructed.
1993	24,700 metric tons (27,210 tons) of PCB-contaminated material (up to 9,000 mg/kg) were removed for offsite disposal. PCBs at this location were primarily the result of the 1969 spill at the old 002 Outfall. Clean fill was used to restore the area to grade.

2.0 SITE-WIDE LONG-TERM STEWARDSHIP

2.1 Long-Term Stewardship Activities

Because contamination remains in place, DOE must conduct long-term surveillance and monitoring. DOE's Office of Defense Programs (DP) will be responsible for institutional controls, continued groundwater remediation, and monitoring. DOE will conduct routine sampling and maintain institutional and procedural controls, including excavation restrictions, in order to protect workers from inadvertent exposure in areas where residual contamination is present. Corrective Action reports, completed as part of the Consent Order, are kept in a library in the Environmental Compliance Department onsite. Documents are also distributed to the DOE Kansas City Area Office, EPA Region 7, and the Missouri Department of Natural Resources.

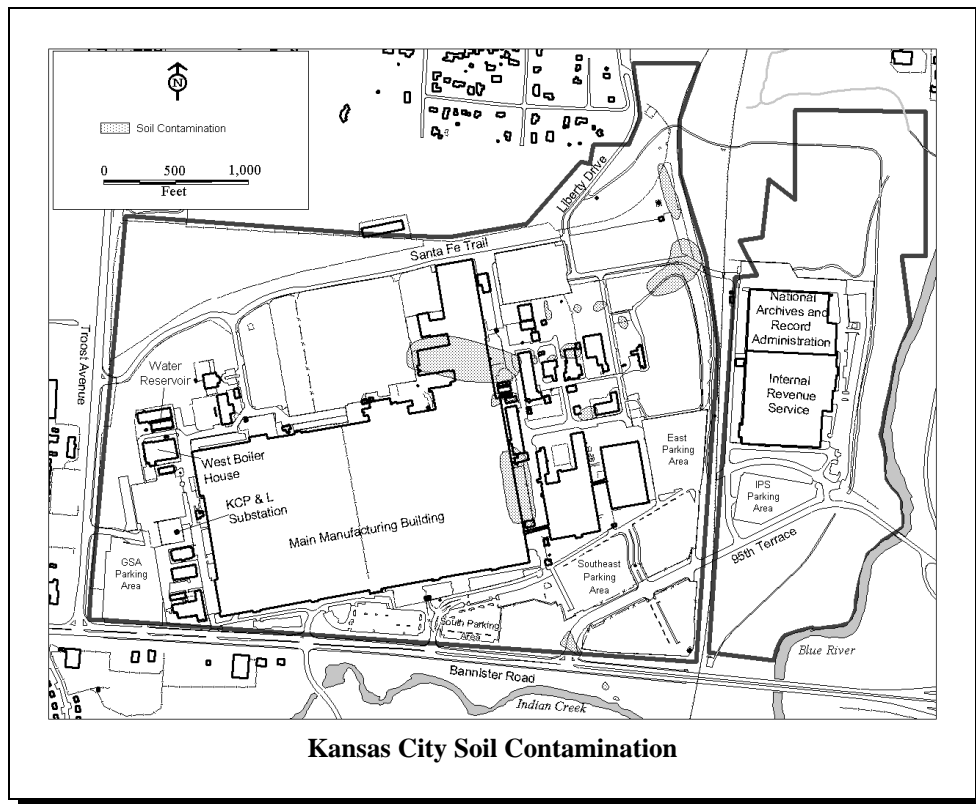
Currently, the site has institutional controls that include both procedural and proprietary controls. Procedural controls include: Hazardous Waste Operations and Emergency Response (HAZWOPER) determination,

preliminary hazard analysis, construction waste assessment, design review, construction safety plan, and an excavation permit. Proprietary controls include: land use restrictions and conditions, a land use restriction notice, a notice to potential transferees, a plan for continuation of institutional controls, and compliance with regulatory requirements. The engineered controls, in place at the site, include a groundwater pump and treat system and an iron wall to contain contaminated groundwater and prevent it from reaching Blue River and Indian Creek. Designs are underway to improve the efficiency and effectiveness of the engineered controls to provide containment and treatment of contaminated groundwater.

2.2 Specific Long-Term Stewardship Activities

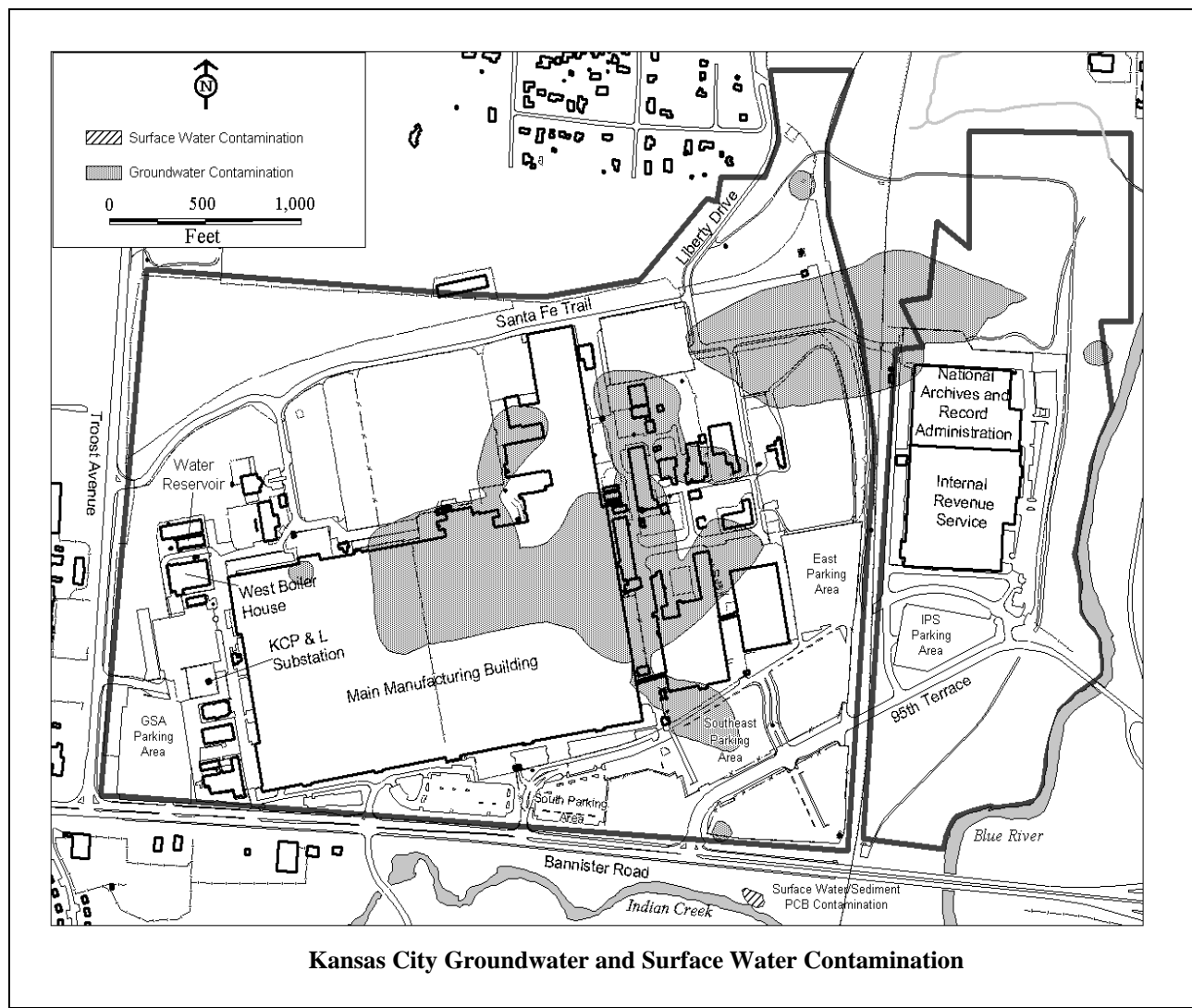
Soil

DOE will conduct routine sampling of the soil and maintain institutional and procedural controls, including excavation restrictions, to protect workers from inadvertent exposure in areas where residual contamination is present. Major areas of soil contamination lie near or under the Main Manufacturing Building, with additional areas of soil contamination located to the east and northeast of the main building. The exact volume of soil subject to long-term stewardship requirements is not known.



Groundwater

Due to the presence of DNAPLs, the site expects that groundwater monitoring will be needed indefinitely. At the present remediation rate, additional treatment may be necessary to restore the alluvial aquifer. Currently, 188 wells are in place to monitor groundwater. Monitoring wells and groundwater treatment equipment will require surveillance and maintenance throughout this treatment period.



Surface Water/Sediment

Due to the presence of PCBs in Indian Creek, DOE periodically monitors for PCBs. As previously mentioned, several projects have addressed PCB concentrations (see previous page). Also, future activities will be influenced by possible changes to the discharge limits for PCB contamination set by the State of Missouri.

2.3 Regulatory Regime

The Missouri Department of Natural Resources has authority over the Post Closure Permit and is the regulatory lead over all environmental restoration for the Kansas City Plant. Long-term stewardship activities at the Kansas City Plant are governed by several regulations, including the *Atomic Energy Act of 1954, as amended*; EPA groundwater protection standards in 40 *Code of Federal Regulations*; and the *National Environmental Policy Act of 1969*, the *Resource Conservation and Recovery Act*, and the *Comprehensive Environmental Response, Compensation, and Liability Act*.

2.4 Assumptions and Uncertainties

DOE assumes that the designated groundwater cleanup levels will be met. If they cannot be met, it may be possible to apply for alternative cleanup levels (ACLs) because of “technical impracticability,” but this will need to be demonstrated. Although the cost estimates assume no additional remediation, the *Resource Conservation and Recovery Act* Post Closure Permit, issued by the Missouri Department of Natural Resources, requires periodic review of new technologies. If a new technology is determined feasible for this site, implementation would be required, which would possibly require increased funding.

3.0 ESTIMATED LONG-TERM STEWARDSHIP COSTS

Estimated costs for long-term stewardship activities for the Kansas City Plant are identified in the table below. Costs are based on monitoring, sampling of the groundwater, and well maintenance. Of the cost totals shown in the cost table, approximately 55% is for groundwater monitoring, 18% for groundwater treatment, and 27% for program management. As stated in Section 2.4, possible future groundwater remediation costs have not been factored into cost estimates as a contingency.

<i>Site Long-Term Stewardship Costs (Constant Year 2000 Dollars)</i>					
<i>Year(s)</i>	<i>Amount</i>	<i>Year(s)</i>	<i>Amount</i>	<i>Year(s)</i>	<i>Amount</i>
FY 2000	\$0	FY 2008	\$1,166,000	FY 2036-2040	\$6,676,000
FY 2001	\$0	FY 2009	\$1,506,000	FY 2041-2045	\$6,689,000
FY 2002	\$0	FY 2010	\$1,167,000	FY 2046-2050	\$6,345,000
FY 2003	\$0	FY 2011-2015	\$6,691,000	FY 2051-2055	\$6,679,000
FY 2004	\$0	FY 2016-2020	\$6,343,000	FY 2056-2060	\$6,691,000
FY 2005	\$1,164,000	FY 2021-2025	\$6,677,000	FY 2061-2065	\$6,345,000
FY 2006	\$1,504,000	FY 2026-2030	\$6,690,000	FY 2066-2070	\$6,677,000
FY 2007	\$1,165,000	FY 2031-2035	\$6,345,000		

4.0 FUTURE USES

DOE’s Office of Defense Programs (DP) has an ongoing mission and will use facilities and land for office space, warehousing, and light manufacturing. DP is expected to be the lead secretarial office and intends to use the site for the foreseeable future. In the event of a landowner change, a Notice to Potential Transferees will be issued, a plan for Continuation of Institutional Controls will be developed, and compliance with the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA) Section 120(h) will be achieved.

For more information about the Kansas City Plant, please contact:

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2000 East 95th Street
P.O. Box 419159
Kansas City, MO 64141-6159
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LATTY AVENUE PROPERTIES ¹

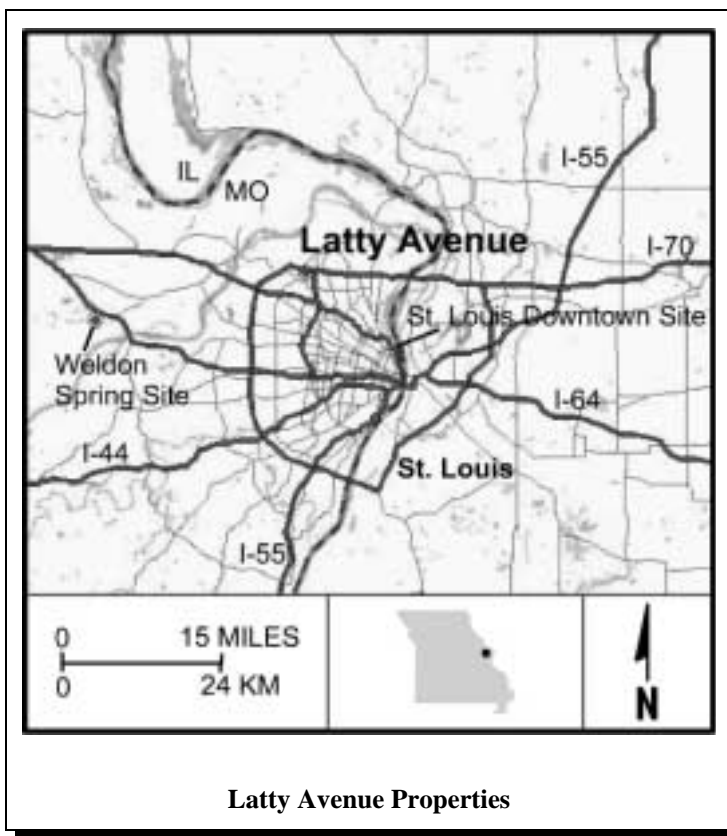
SITE SUMMARY

The Latty Avenue Properties are located in an area approximately one kilometer (0.6 mile) north of the St. Louis Airport in the towns of Hazelwood and Berkeley, Missouri. The Latty Avenue Properties include: (1) the Hazelwood Interim Storage Site, which was used for interim storage of materials removed from St. Louis vicinity properties; (2) the Futura Coatings Site, which was a Futura Coatings, Inc.-leased property used for manufacturing plastic coatings; and (3) several vicinity properties on Latty Avenue.

During the 1940s and 1950s, the Mallinckrodt Chemical Company conducted uranium milling and refining operations under contracts with the Manhattan Engineer District and the Atomic Energy Commission (predecessor agencies to the U.S. Department of Energy) at the nearby St. Louis Downtown Site in Missouri. During the same period, Mallinckrodt transported process residues to the St. Louis Airport Site for storage. The process residues at the St. Louis Airport Site were sold to a commercial firm in the late 1960s, and the residues were transported to a property at 9200 Latty Avenue for storage and processing. This material was subsequently sold to the Cotter Corporation and shipped to its facilities in Cañon City, Colorado. By the early 1970s, the material had been removed from the Latty Avenue site, and the Cotter Corporation's Nuclear Regulatory Commission (NRC) license was terminated. However, soil analyses conducted by the NRC in 1976, and subsequent radiological assessments by others, indicated that there were residual uranium and thorium concentrations above criteria for unrestricted land use.

In 1983, Congress authorized the cleanup of the Latty Avenue Properties as a research and development contamination project under the Formerly Utilized Sites Remedial Action Program (FUSRAP).

Current radiological contamination present no significant health risks to workers or the public under the current site-use and land-use conditions. The Corps' remedial action for this site is not yet complete and, therefore, the extent of long-term stewardship required, if any, is not yet known.



¹ The Latty Avenue Properties Site comprise one of the 21 Formerly Utilized Sites Remedial Action Program (FUSRAP) sites where cleanup responsibility was transferred to the U.S. Army Corps of Engineers (Corps) in accordance with the Energy and Water Development Appropriations Act for FY 1998. At these 21 sites, the Corps is responsible for remediation and DOE is responsible for long-term stewardship activities, if any are deemed necessary. The cleanup decisions for these sites are not yet final and, therefore, the extent of long-term stewardship required for these sites, if any, is not yet known.

For additional information about the Latty Avenue Properties, please contact:

FUSRAP Project Office
St. Louis District
U.S. Army Corps of Engineers
8945 Latty Avenue
Berkeley, MO 63134
Phone: 314-260-3905
or visit the Internet website at: <http://www.mvs.usace.army.mil/engr/fusrap/home2.htm>

ST. LOUIS AIRPORT SITE ¹

SITE SUMMARY

The St. Louis Airport Site is adjacent to the northern boundary of the Lambert-St. Louis International Airport Authority in St. Louis County, Missouri. The site is approximately 25 kilometers (15 miles) northwest of downtown St. Louis. The site was used primarily to store process residues from the former Mallinckrodt Chemical Company plants in downtown St. Louis, currently known as the St. Louis Downtown Site.

The Manhattan Engineer District (MED), an early predecessor agency of the U.S. Department of Energy (DOE), acquired the St. Louis Airport Site in 1946. The site was operated by the Manhattan Engineer District and the Atomic Energy Commission (the successor agency to the MED and a predecessor agency of DOE) from 1946 to 1953 to store residues from the milling and refining of high-grade uranium ore conducted at the St. Louis Downtown Site. During the late 1960s, the stored process residues were sold and removed from the site. Also, in the late 1960s, title to the property was transferred to the Lambert-St. Louis Airport Authority. Ownership of the site was assumed by the city of St. Louis in the 1970s, with the Lambert-St. Louis Airport Authority being responsible for access to and maintenance of the site.

In the Energy and Water Development Appropriations Act for Fiscal Year 1985, Congress directed DOE to reacquire the site for use as a disposal facility for contaminated materials and wastes from the Latty Avenue Properties Site in Hazelwood, Missouri, as well as the St. Louis Airport Site Vicinity Properties. However, absent an agreement and important decisions regarding final cleanup of the principal St. Louis sites, work was initiated to clean up designated vicinity properties and haul road contamination. An interim storage site on Latty Avenue in Hazelwood is being used to store radioactively contaminated soil from vicinity properties and haul roads.



Contaminants of concern from storage activities at the St. Louis Airport Site are uranium, thorium, metals, and organics.

¹ The St. Louis Airport Site is one of the 21 Formerly Utilized Sites Remedial Action Program (FUSRAP) sites where cleanup responsibility was transferred to the U.S. Army Corps of Engineers (Corps) in accordance with the Energy and Water Development Appropriations Act for FY 1998. At these 21 sites, the Corps is responsible for remediation and DOE is responsible for long-term stewardship activities, if any are deemed necessary. The cleanup decisions for these sites are not yet final and, therefore, the extent of long-term stewardship required for these sites, if any, is not yet known.

The Corps' remedial action for this site is not yet complete and, therefore, the extent of long-term stewardship required, if any, is not yet known.

For additional information about the St. Louis Airport Site, please contact:

FUSRAP Project Office
St. Louis District
U.S. Army Corps of Engineers
8945 Latty Avenue
Berkeley, MO 63134
Phone: 314-260-3905
or visit the Internet website at: <http://www.mvs.usace.army.mil/engr/fusrap/home2.htm>

ST. LOUIS AIRPORT SITE VICINITY PROPERTIES¹

SITE SUMMARY

The St. Louis Airport Site Vicinity Properties are located in the towns of Hazelwood and Berkeley, Missouri, approximately 25 kilometers (15 miles) northwest of downtown St. Louis. The properties are associated with both the St. Louis Airport Site and the Latty Avenue Properties.

The Manhattan Engineer District (MED), an early predecessor agency of the U.S. Department of Energy (DOE), acquired the St. Louis Airport Site in 1946. The site was operated by the Manhattan Engineer District and the Atomic Energy Commission (the successor agency to the MED and a predecessor agency of DOE) from 1946 to 1953 to store residues from uranium processing operations, primarily from the former Mallinckrodt Chemical Company Plants in St. Louis, at a location currently referred to as the St. Louis Downtown Site.

By the late 1960s, most of the residues were sold to Continental Mining and Milling Company and removed from the St. Louis Airport Site to their property on Latty Avenue, which is part of the Latty Avenue Vicinity Properties.



As a consequence of moving these residues from the St. Louis Airport Site to Latty Avenue, several vicinity properties and locations (right-of-ways) along the haul roads were contaminated with the radioactive constituents of the residues. Also, over time, natural migration by water and wind resulted in the transport of radioactive contamination to several properties contiguous to the St. Louis Airport Site and along Coldwater Creek. Radioactive contaminants have been removed from most of the properties and placed in temporary storage at the Hazelwood Interim Storage Site.

The Corps' remedial action for the St. Louis Airport Vicinity Properties Site is not yet complete and, therefore, the extent of long-term stewardship required, if any, is not yet known.

¹ The St. Louis Airport Site Vicinity Properties comprise one of the 21 Formerly Utilized Sites Remedial Action Program (FUSRAP) sites where cleanup responsibility was transferred to the U.S. Army Corps of Engineers (Corps) in accordance with the Energy and Water Development Appropriations Act for FY 1998. At these 21 sites, the Corps is responsible for remediation and DOE is responsible for long-term stewardship activities, if any are deemed necessary. The cleanup decisions for these sites are not yet final and, therefore, the extent of long-term stewardship required for these sites, if any, is not yet known.

For additional information about the St. Louis Airport Site Vicinity Properties, please contact:

FUSRAP Project Office
St. Louis District
U.S. Army Corps of Engineers
8945 Latty Avenue
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or visit the Internet website at: <http://www.mvs.usace.army.mil/engr/fusrap/home2.htm>

ST. LOUIS DOWNTOWN SITE ¹

SITE SUMMARY

The St. Louis Downtown Site is located in an industrial area on the eastern border of St. Louis, about 60 meters (200 feet) west of the Mississippi River. The St. Louis Downtown Site is an operating industrial facility owned by Mallinckrodt, Inc

From the 1940s to 1950s, Mallinckrodt Chemical Company conducted a variety of uranium processing and recovery operations at the site in support of the national defense program. During closeout of operations in the late 1950s, government-owned buildings were either dismantled or transferred to Mallinckrodt as part of a settlement agreement.

Contamination at the St. Louis Downtown Site originated from industrial-scale milling to recover uranium from high-grade uranium ore, among other processing activities (e.g., extraction and concentration of thorium-230 from pitchblende raffinate). The primary contaminants of concern at the site include uranium, thorium, and radium. Based on chemical characterization data, several metals (antimony, arsenic, beryllium, lead, nickel, and thallium) are also present at concentrations above background levels. The St. Louis Downtown Site was designated for cleanup by the U.S. Department of Energy (DOE) under the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1984. The final decision on a remedy for all St. Louis sites has not been made. However, cleanup activities have been conducted in support of building construction and renovation operations by Mallinckrodt. Residual radioactive materials that were accumulated were place in interim storage on the site.

The potential for contaminant transport is limited. Impervious materials (e.g., buildings) cover most of the contaminated soils.

The Corps' remedial action for the site is not yet complete and, therefore, the extent of long-term stewardship required, if any, is not yet known.



¹ The St. Louis Downtown Site is one of the 21 Formerly Utilized Sites Remedial Action Program (FUSRAP) sites where cleanup responsibility was transferred to the U.S. Army Corps of Engineers (Corps) in accordance with the Energy and Water Development Appropriations Act for FY 1998. At these 21 sites, the Corps is responsible for remediation and DOE is responsible for long-term stewardship activities, if any are deemed necessary. The cleanup decisions for these sites are not yet final and, therefore, the extent of long-term stewardship required for these sites, if any, is not yet known.

For additional information about the St. Louis Downtown Site, please contact:

FUSRAP Project Office
St. Louis District
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or visit the Internet website at: <http://www.mvs.usace.army.mil/engr/fusrap/home2.htm>

WELDON SPRING SITE

1.0 SITE SUMMARY

1.1 Site Description and Mission

The Weldon Spring Site is located in southern St. Charles County, Missouri, approximately 48.2 kilometers (30 miles) west of St. Louis along Missouri State Route 94. The site consists of two main areas, the Weldon Spring Chemical Plant and the Weldon Spring Quarry.

The Weldon Spring Chemical Plant Site is an 87.8-hectare (217-acre) area initially used by the U.S. Army during the 1940s to produce the explosives trinitrotoluene (TNT) and dinitrotoluene (DNT), and later by the U.S. Atomic Energy Commission (AEC) [a predecessor agency to the U.S. Department of Energy (DOE)] to process uranium and thorium ore concentrates. Site features included 40 buildings, four raffinate pits, two ponds, and two former dump areas. The plant was operated by Mallinckrodt Chemical Company from 1957 until it was shut down in 1966.

LONG-TERM STEWARDSHIP HIGHLIGHTS

Major Long-Term Stewardship Activities - surface water and groundwater monitoring; disposal cell maintenance and monitoring; institutional controls; inspections

Total Site Area - 91.4 hectares (226 acres)

Estimated Volume of Residual Contaminants - engineered unit 1.13 million cubic meters (1.48 million cubic yards); groundwater 85,000 cubic meters (110,000 cubic yards)

Long-Term Stewardship Start-End Years - 2003-in perpetuity

Portions in Long-Term Stewardship as of 2006 - 2
Average Annual Long-Term Stewardship Cost FY 2003-2006 - \$1,006,000

Landlord - U.S. Department of Energy, Grand Junction Office (beginning in 2003)

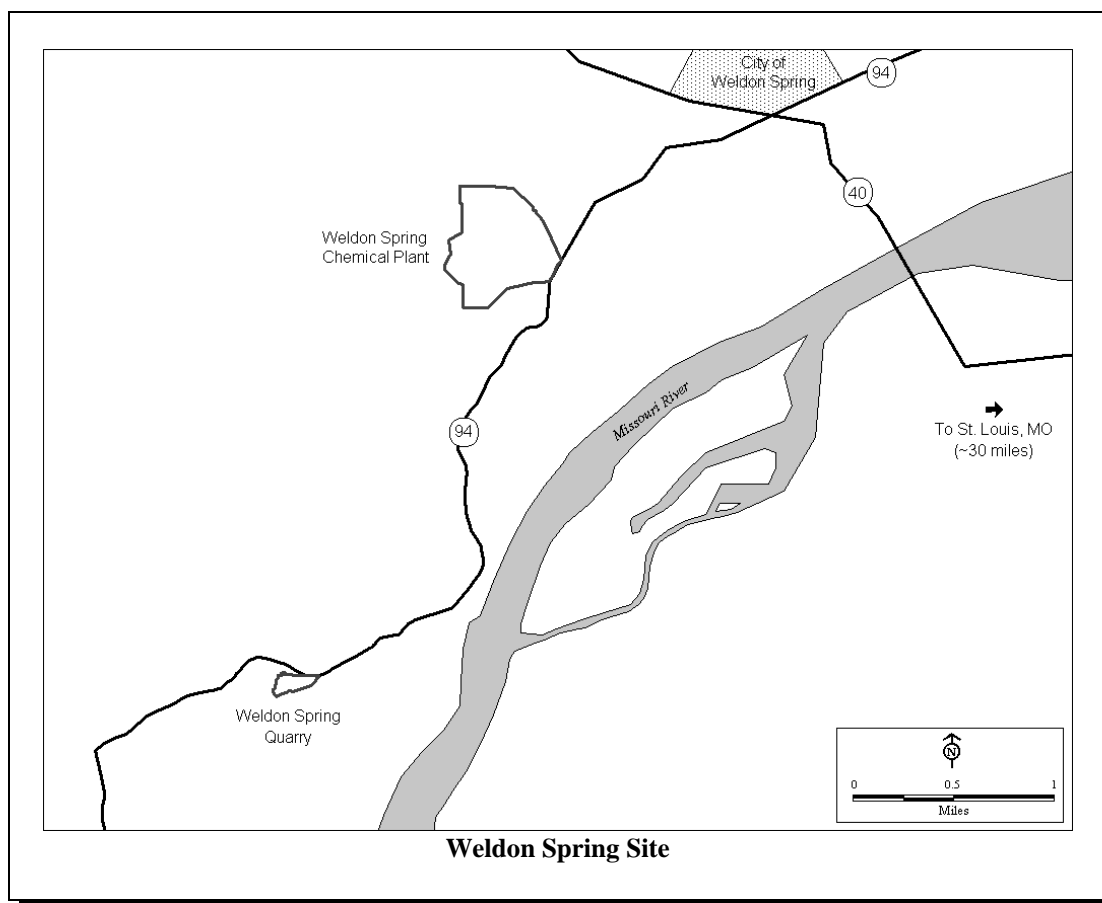
The Weldon Spring Site Quarry is a 3.6-hectare (nine-acre) limestone quarry located 6.5 kilometers (four miles) southwest of the chemical plant area. Historically, the site was used to dispose of manufacturing wastes and contaminated process residues from TNT and DNT production at the chemical plant, as well as radiologically contaminated wastes generated from processing uranium and thorium ores. Building rubble also was disposed of at the quarry after decommissioning of the explosives production facilities at the chemical plant site. The quarry is surrounded by the Weldon Spring Conservation Area. The Katy Trail State Park (Katy Trail) passes just south of the quarry. The St. Charles County well field is located southeast of the quarry between the Femme Osage Slough and the Missouri River. Groundwater for the quarry area lies between the quarry proper and the St. Charles County well field.

The Weldon Spring Remedial Action Project began in 1985. DOE is the current owner of the site and is responsible for conducting all site activities. Remediation of vicinity properties has been completed, and remediation of the quarry site and the chemical plant site is expected to be completed by 2002, after which the only ongoing mission at the Weldon Spring Site will be performing long-term stewardship activities. Long-term stewardship activities will be the responsibility of DOE.

1.2 Site Cleanup and Accomplishments

The sources of contamination at the Weldon Spring Site were the wastes and residues generated by explosives production and uranium and thorium processing operations. Completed remedial activities include the removal of 110,000 cubic meters (144,000 cubic yards) of bulk waste from the quarry site, removal and treatment of contaminated water from the quarry, power washing and sealing rock fractures, and removal of residual radioactive materials from 17 vicinity properties. The vicinity properties, with the exception of the Southeast Drainage and the Frog Pond Outlet, were remediated to standards that are appropriate for unrestricted use and

do not require long-term stewardship activities. The Southeast Drainage area was excavated to remove contaminated soil and sediment from 55 locations along the length of the drainage to levels considered protective under a “modified residential/child recreational” scenario. Soils exceeding the uranium cleanup criteria remain beneath the Frog Pond Outlet area. A risk assessment incorporating both recreational and industrial worker scenarios determined that potential risk levels fell within the acceptable range set by the Environmental Protection Agency.



Reclamation of the chemical plant site included: the demolition of all site buildings; excavation of contaminated soil from former onsite disposal areas and building locations; dredging raffinate pit sludge and subsequent treatment by chemical stabilization and solidification; and dredging sediment from ponds and some vicinity properties. Wastes were disposed of in a 17-hectare (42-acre) disposal cell, which was constructed with a double liner and leachate collection system and a multi-layered cap to minimize radon emissions and prevent infiltration of water and intrusion by plants and animals. Approximately 1,132,000 cubic meters (1,480,000 cubic yards) of radioactive and chemical wastes, contaminated soils, sediment, and debris were disposed of in the Weldon Spring Site disposal cell. DOE anticipates the disposal cell will be completed and capped in 2002.

Contaminated groundwater remains beneath the chemical plant area of the site, primarily in the western and southwestern portions of the site. Contaminants to the southwest include trichloroethene (TCE), uranium, nitrate and nitroaromatic compounds (2,4-DNT; 2,6-DNT; 2,4,6-TNT and 2,6-DNT). Groundwater in the western portion of the site contains nitrate; 2,4-DNT and 2,6-DNT. Nitroaromatic contamination is also present to a lesser extent on the eastern portion of the site, east of the chemical plant in one offsite well (uranium) as well as in two small, noncontiguous areas to the northeast (nitrate; 2,6-DNT; 2,4,6-TNT and 1,3,5-DNB).

Burgermeister Spring is routinely monitored for uranium and nitrate, while two springs located within the Southeast Drainage area are currently monitored for uranium and nitroaromatic compounds.

2.0 SITE-WIDE LONG-TERM STEWARDSHIP

2.1 Site-Wide Long-Term Stewardship Activities

Because of the contamination resulting from past operations, long-term stewardship activities will be required at the Weldon Spring Site. These activities will include maintaining restrictions on groundwater use, land use, and site access, and monitoring groundwater and surface water. Long-term stewardship activities also will include monitoring and maintaining the disposal cell and operating the disposal cell leachate collection system.

LONG-TERM STEWARDSHIP GOALS

Maintain restrictions on groundwater use, land use, and site access; and monitor groundwater and surface water for continued protection of human health and the environment.

All records related to implementation of the long-term monitoring and maintenance plan for the Weldon Spring Site will be maintained in permanent site files in accordance with archival procedures set forth in Federal property management regulations. An annual report will be developed to summarize, describe, and evaluate all monitoring and maintenance actions conducted at the Weldon Spring Site, including annual site inspections, groundwater and surface water monitoring, any corrective actions, and any other activities conducted in conjunction with the long-term operations, surveillance, and maintenance of the site. The annual reports will be included in permanent files stored onsite, and will be available for review by affected regulatory agencies and other stakeholders. Public or small group meetings may be held following distribution of the annual reports, based on level of interest.

Institutional Controls

Institutional controls for the quarry site include restrictions on groundwater use, as well as restrictions on land use in the vicinity of the quarry site to recreational uses. Institutional controls at the chemical plant site include access restrictions to the leachate sump system and land use restrictions outside of the perimeter road. The chemical plant area outside of the perimeter road remains under DOE control and is being revegetated with native grasses and plant species. Post-closure land use restrictions for the chemical plant are required to preserve the final grading patterns of the site, which provide erosion control and prevent any drainage back towards the disposal cell. Institutional controls are also required to protect and maintain access to monitoring wells. Institutional controls are necessary in the vicinity of the quarry site to prevent groundwater use that would be inconsistent with recreational use, contribute to groundwater contaminant migration, or restrict municipal access to groundwater for domestic usage. For the Southeast Drainage, the existing easement agreement with the Missouri Department of Conservation will be modified to impose restrictions on future land use in order to ensure that no private development occurs within the drainage proper.

STAKEHOLDER INVOLVEMENT

Public involvement with the Weldon Spring Site is conducted in accordance with the requirements of the *Comprehensive Environmental Compensation, Response, and Liability Act* (CERCLA) and DOE and EPA public involvement guidelines. The Weldon Spring Citizens Commission was established in January 1995 to serve as a monitoring committee and communications link between DOE and St. Charles County citizens and elected county officials.

Some surface water monitoring sites and monitoring wells used for groundwater monitoring are not located on

DOE-controlled land, but are located on either the adjacent U.S. Army Weldon Spring Training Area or the Missouri Department of Conservation property. Access agreements are in place between DOE, the U.S. Army, and the Missouri Department of Conservation regarding access to these wells and will be maintained, as required, based on long-term monitoring needs.

2.2 Regulatory Regime

Long-term stewardship activities at the Weldon Spring Site will begin in 2003. A Memorandum of Understanding between DOE and the U.S. Army resulted in transfer of the ownership of the Weldon Spring Site to DOE in 1985. The quarry site was placed on the U.S. Environmental Protection Agency's (EPA's) National Priorities List in 1987, and the remainder of the site was placed on the National Priorities List in 1989. Remediation of the quarry site was completed in 1996, in accordance with the *Record of Decision for the Management of Bulk Wastes at the Weldon Spring Quarry*, and the *Record of Decision for Remedial Action for the Quarry Residuals Operable Unit* under the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA) under the supervision of EPA and the State of Missouri. Remediation of the chemical plant site is being conducted in accordance with the 1993 *Chemical Plant Record of Decision* and *Record of Decision for the Chemical Plant Groundwater Operable Unit* (anticipated to be issued in 2000) under CERCLA. Requirements for surveillance and maintenance of the engineered disposal cell, long-term monitoring of groundwater and surface water, and maintenance of institutional controls at the quarry and chemical plant sites are established in these Records of Decision (RODs).

Section 120 of CERCLA requires the negotiation of a legally binding Federal Facilities Agreement between agencies (i.e., DOE and EPA). This agreement establishes timetables, procedures, and documentation for the remedial action. Under the CERCLA process, a ROD formally documents the selection of a preferred remedial alternative. The ROD is a legally enforceable document that ensures all components of the remedial action are implemented. Once issued, the ROD is incorporated into the Federal Facilities Agreement; therefore, any physical or institutional controls specified in the ROD will be enforceable through the Federal Facilities Agreement.

Three RODs have been signed for both the chemical plant area and quarry area. The Quarry Residuals Operable Unit (OU) ROD and the Chemical Plant OU ROD specify long-term monitoring activities as a portion of the selected remedy. The ROD for the quarry also discusses implementation of institutional controls as a component of the cleanup action. The ROD for the chemical plant states that any institutional controls pertinent to the future use of the property, such as restrictions on the use of land or groundwater, will be deferred until the final remedy for groundwater is determined.

In addition to CERCLA, long-term stewardship activities at the Weldon Spring Site will be governed by several regulations, including the *Atomic Energy Act of 1954*, as amended; EPA groundwater protection standards, including Subparts B and C of the *Code of Federal Regulations*; and cooperative agreements with the U.S. Army, EPA, and the State of Missouri.

2.3 Assumptions and Uncertainties

Assumptions for the Weldon Spring Site are generally that the final site remediation and long-term stewardship activities will be conducted in accordance with the CERCLA RODs for the quarry and chemical plant sites. Uncertainties are addressed through contingency plans developed for the site. These plans address such issues as disposal cell cover settlement, biointrusion, surface erosion, changes in leachate flow rates, and potential migration of contaminants in the vicinity of the St. Charles County wellfield.

2.4 Estimated Site-Wide Long-Term Stewardship Costs

Long-term stewardship cost estimates for the Weldon Spring Site, identified in the table below, were based on a detailed long-term surveillance and maintenance cost estimate developed by the Weldon Spring Remedial Action Project. These estimates and were reviewed by DOE's Grand Junction Office.

<i>Site Long-Term Stewardship Costs (Constant Year 2000 Dollars)</i>					
<i>Year(s)</i>	<i>Amount</i>	<i>Year(s)</i>	<i>Amount</i>	<i>Year(s)</i>	<i>Amount</i>
FY 2000	\$0	FY 2008	\$1,005,589	FY 2036-2040	\$5,027,945
FY 2001	\$0	FY 2009	\$1,005,589	FY 2041-2045	\$5,027,945
FY 2002	\$0	FY 2010	\$1,005,589	FY 2046-2050	\$5,027,945
FY 2003	\$1,005,589	FY 2011-2015	\$5,027,945	FY 2051-2055	\$5,027,945
FY 2004	\$1,005,589	FY 2016-2020	\$5,027,945	FY 2056-2060	\$5,027,945
FY 2005	\$1,005,589	FY 2021-2025	\$5,027,945	FY 2061-2065	\$5,027,945
FY 2006	\$1,005,589	FY 2026-2030	\$5,027,945	FY 2066-2070	\$5,027,945
FY 2007	\$1,005,589	FY 2031-2035	\$5,027,945		

3.0 PORTION OVERVIEW

The Weldon Spring Site's long-term stewardship activities will be performed at two portions of the site: the chemical plant site portion and the quarry groundwater portion. For the purposes of this report, a "portion" is a geographically contiguous and distinct area (which may involve residually contaminated facilities, engineered units, soil, groundwater, an/or surface water/sediment) for which cleanup, disposal, or stabilization will have been completed and long-term stewardship activities will be required as of 2006. These areas were reported as separate portions because they are 6.5 kilometers (four miles) apart, and because of their varying contamination and cleanup requirements. DOE conducted the active cleanup of these areas as separate operable units.

<i>Long-Term Stewardship Information</i>		
<i>Portion</i>	<i>Long-Term Stewardship Start Year</i>	<i>Long-Term Stewardship End Year</i>
Chemical Plant	2003	In perpetuity
Quarry Groundwater	2003	In perpetuity

3.1 Weldon Spring Chemical Plant Site Portion

The Weldon Spring Chemical Plant site portion consists of 87.8 hectares (217 acres) and operated as the Weldon Spring Uranium Feed Materials Plant until 1966. The plant converted uranium concentrates to uranium tetrafluoride and uranium metal. Thorium, also a radioactive metal, was processed at the plant. Residues from the processing operations were disposed in four large open raffinate pits that consisted of four settling basins covering 10.5 hectares (26 acres). The pits were radiologically contaminated with uranium and thorium residues, and chemical contaminants, including nitrate, fluoride, polychlorinated biphenyls (PCBs), and heavy metals. The

site also had two ponds: Ash Pond and Frog Pond. During plant operations from 1957 to 1966, the plant, buildings, equipment, soil surface, sewer system, and drainage into the Missouri River became contaminated with uranium and thorium and their decay products. The buildings were contaminated with asbestos, hazardous chemical substances, uranium, and thorium. After site reclamation activities, the groundwater and engineered disposal cell will require long-term stewardship activities.

Long-term stewardship activities for the chemical plant site portion will include leachate management, site inspections, groundwater monitoring, lab analyses, record-keeping, and report preparation in accordance with the CERCLA RODs for both the chemical plant site and associated groundwater area. After remediation is complete, the final chemical plant site area will consist of the disposal cell, a leachate sump located to the north of the cell, and the perimeter access road. The land outside the perimeter road will remain under DOE control and will be revegetated with native grasses and plant species. At some point in the future, portions of this property may be permitted for use by other agencies, provided this use is consistent with land use restrictions and requirements.

Two buildings will remain at the chemical plant – the main administration building and the access control building. The administration building will be leased to Francis Howell School District for expansion of their administrative offices. Building maintenance and utilities upkeep will be the responsibilities of the school district. The access control building will house the Weldon Spring Site Interpretive Center. With the exception of the leachate sump, there will be no access restrictions around the disposal cell.

3.1.1 Groundwater

Contaminated groundwater, approximately 14 hectares (35 acres), remains beneath the chemical plant area of the site, primarily in the western and southwestern portions of the site. The chemical plant area is located on the Missouri-Mississippi River surface drainage divide. The northern and western portions of the site drain to tributaries flowing into the Mississippi River, while the southern portion of the site generally flows to the southeast drainage area tributary, which flows to the Missouri River. A similar groundwater divide transects the southern portion of the site, with groundwater from the southern portion of the site flowing towards the Mississippi River, and groundwater from the north and western portions flowing towards the Missouri. The Burgermeister Spring provides a localized point of emergence for groundwater flowing from the western and northern portions of the site.

The disposal cell groundwater monitoring system consists of five monitoring wells (four downgradient and one upgradient of the Burgermeister Spring). The system is designed to provide long-term monitoring of the disposal cell in compliance with the Resource Conservation and Recovery Act (RCRA) groundwater monitoring standard detailed in Title 40 of the *Code of Federal Regulations*, Part 264, Subpart F, and State regulation 10 CSR 25-7.264(2)(F). The system monitors groundwater quality in the shallow aquifer.

Standard operating procedures will be developed for monitoring well installation and development, water sampling, sample preservation and transport, field procedures, and chain of custody. All aspects of groundwater monitoring will be conducted in accordance with these procedures. The standard operating procedures are based

WELDON SPRING CHEMICAL PLANT SITE HIGHLIGHTS

Major Long-Term Stewardship Activities - site inspections; groundwater monitoring; institutional controls

Portion Size - 87.8 hectares (217 acres)

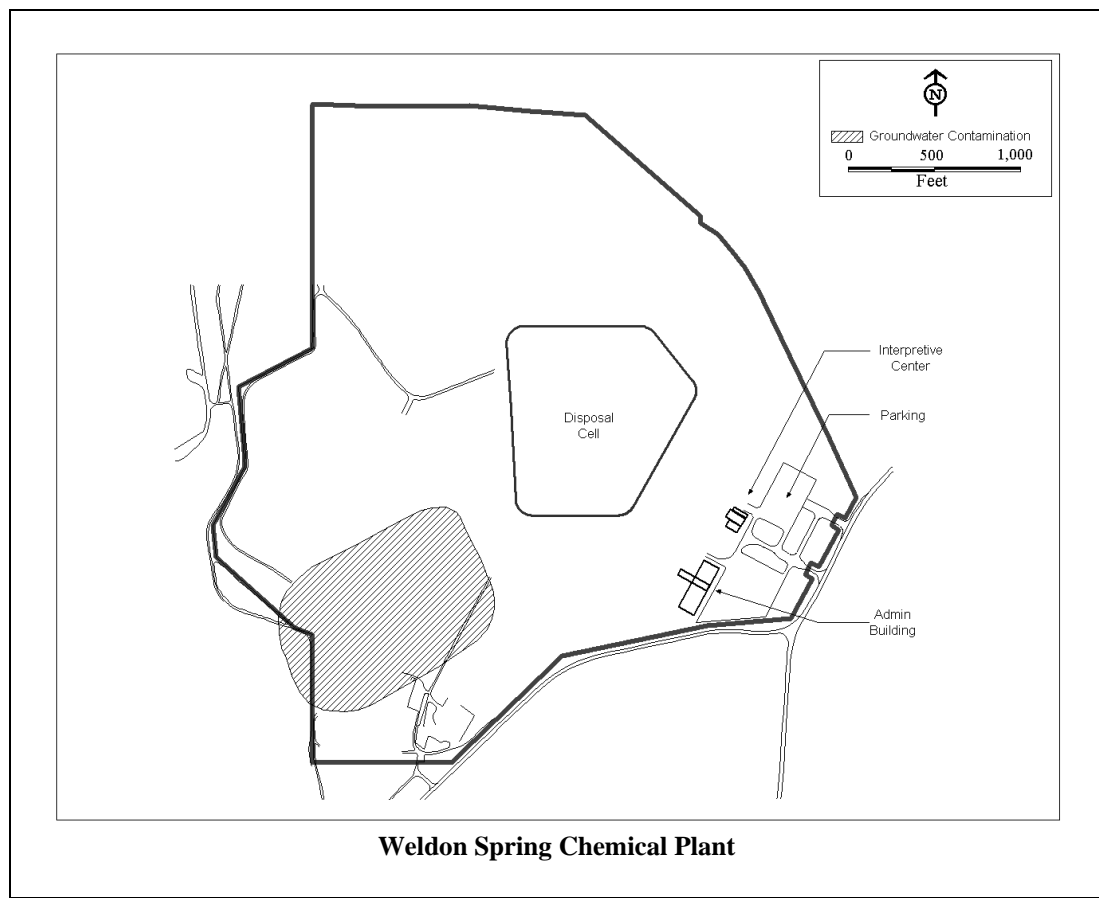
Estimated Volume of Residual Contaminants - engineered units 1.13 million cubic meters (1.48 million cubic yards); groundwater unknown

Long-Term Stewardship Start-End Years - 2003-in perpetuity

Average Annual Long-Term Stewardship Cost FY 2003-2006 - \$671,000

on industry standards, “best management” practices, and EPA guidance.

Details regarding implementation of the long-term monitoring program for groundwater at the chemical plant site will be developed once the groundwater ROD is finalized.



Groundwater Long-Term Stewardship Activities

Long-term stewardship activities for the disposal cell groundwater monitoring system include contaminant detection monitoring, which will be conducted on a semi-annual basis for all compliance wells and Burgermeister Spring. DOE anticipates that if contaminant concentrations decrease over time and the disposal cell performance measures remain stable for a period of 30 years, the compliance monitoring program may be discontinued. If trends indicate an upward movement in contaminant concentrations, necessitating corrective actions for the cell, the program may be extended past the 30-year period, based upon discussion between DOE and the EPA. Long term stewardship activities for the site groundwater portion will be developed once the groundwater ROD is finalized.

3.1.2 Engineered Units

The disposal cell is the only remaining facility on the chemical plant portion that contains contaminated materials and requires long-term stewardship activities. The cell encompasses 17 hectares (42 acres). The cell was constructed with a double liner, a leachate collection system, and a multi-layered cap to minimize radon

emissions and prevent infiltration of water and intrusion by plants and animals. Approximately 1.13 million cubic meters (1.48 million cubic yards) of radioactive and chemical waste, and contaminated soil, sediment and debris are disposed of in the Weldon Spring Site disposal cell. DOE anticipates that the disposal cell will be completed and capped in 2002.

Engineered Unit Long-Term Stewardship Activities

Visual inspections of the disposal cell will be conducted on an annual basis. The inspection results will be recorded in the site maintenance log. Photographs will be taken, as necessary, to document changing site conditions. Annual inspections will continue for the first five years following closure of the disposal cell. If no changes are evident after this five-year time frame, inspections may be decreased as deemed appropriate.

3.1.3 Estimated Long-Term Stewardship Costs for Chemical Plant (Disposal Cell and Site Groundwater)

<i>Long-Term Stewardship Costs (Constant Year 2000 Dollars)</i>							
<i>FY 2000 - FY 2010</i>	<i>FY 2011 - FY 2020</i>	<i>FY 2021 - FY 2030</i>	<i>FY 2031 - FY 2040</i>	<i>FY 2041 - FY 2050</i>	<i>FY 2051 - FY 2060</i>	<i>FY 2061 - FY 2070</i>	<i>Estimated Total</i>
\$5,370,656	\$6,713,320	\$6,713,320	\$6,713,320	\$6,713,320	\$6,713,320	\$6,713,320	\$45,650,576

3.2 Quarry Groundwater Portion

The Weldon Spring Site quarry is a 3.6-hectare (nine-acre) limestone quarry located 6.5 kilometers (four miles) southwest of the chemical plant area. This site was historically used for disposal of manufacturing waste created during the ordnance works activities, contaminated process residue and building rubble from the decommissioning of the ordnance works, and radiologically contaminated wastes from the chemical plant area processing activities. No direct surface water runoff enters or exits the quarry due to the topography of the area. Prior to remediation, a small (0.08-hectare/0.2-acre) pond within the quarry proper acted as a sump to accumulate both direct rainfall and groundwater. Groundwater in the area is located within both alluvial and bedrock aquifer systems, and flows towards the Missouri River.

QUARRY GROUNDWATER HIGHLIGHTS

Major Long-Term Stewardship Activities - inspections; groundwater monitoring; institutional controls
Portion Size - 3.6 hectares (9 acres)
Estimated Volume of Residual Contaminants - groundwater 85,000 cubic meters (110,000 cubic yards)
Long-Term Stewardship Start-End Years - 2003-in perpetuity
Average Annual Long-Term Stewardship Cost FY 2003-2006 - \$334,000

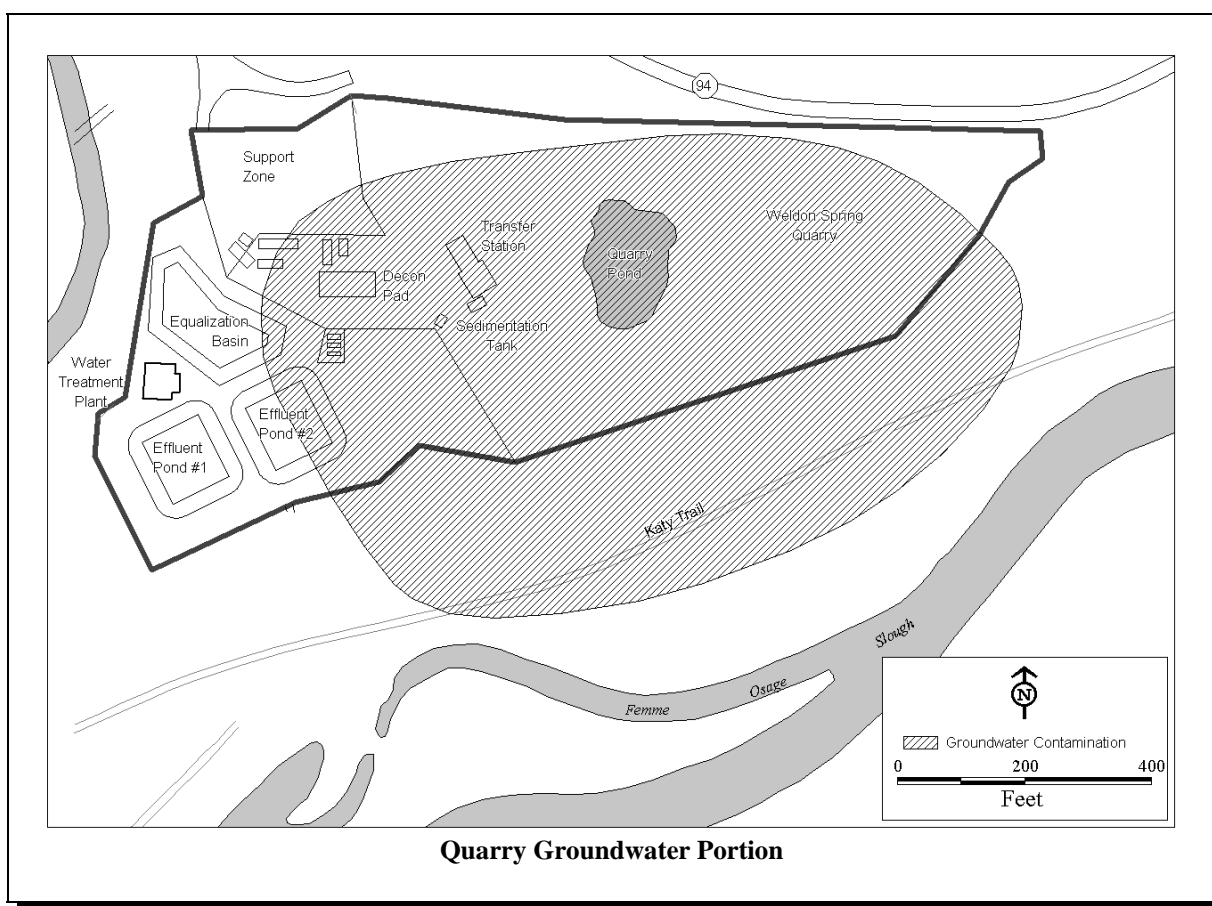
3.2.1 Groundwater

Approximately 110,000 cubic meters (144,000 cubic yards) of soil and waste material were removed from the quarry and transported to the chemical plant area as part of the remedial action stipulated in the CERCLA ROD for the management of the bulk wastes at the Weldon Spring Site quarry. Bulk waste removal was completed in October 1995. These wastes were staged in the Temporary Storage Area and were subsequently placed in the disposal cell in 1999. Rock fractures were power washed and sealed, to the extent practicable, to assist in removing residual contamination. Contaminated water contained in the quarry pond was also removed and treated through the quarry site water treatment plant. Quarry restoration is scheduled for completion in 2001. Restoration activities include demolition of the water treatment plant and other facilities used during bulk waste

removal, as well as backfilling of the quarry proper.

The ROD for the quarry identified long-term monitoring and institutional controls on groundwater usage as a component of the selected remedy. For uranium levels in the groundwater to the north of the Femme Osage Slough, the potential estimated risk is greater than the acceptable risk range of 10^{-6} to 10^{-4} . Both uranium and 2,4-DNT are being monitored in this area. South of the slough, uranium levels are within background ranges, and will continue to be monitored to ensure that levels remain protective.

As part of the remedial investigation/feasibility study process, risk assessments for both radiological and chemical contaminants were conducted on surface waters and sediment from the upper and lower reaches of the Femme Osage Slough, Little Femme Osage Creek, and downstream portions of the Femme Osage Creek. Results indicated that, under a recreational scenario, the potential risk for the slough and creeks is within or below the acceptable risk range of 10^{-6} to 10^{-4} and no further actions were warranted.



Groundwater Long-Term Stewardship Activities

Contaminated groundwater north of the Femme Osage Slough was addressed as part of the Quarry remedial action. The St. Charles County well field is in close proximity to the area south of the slough. Monitoring of groundwater south of the slough will be conducted to ensure that residual contamination remains at levels deemed protective of human health and the environment.

Institutional controls for the groundwater north of the slough are necessary to prevent uses inconsistent with

recreational uses, or that would adversely affect contaminant migration. DOE, the Missouri Department of Conservation, and the Missouri Department of Natural Resources will establish a deed restriction that outlines the terms of an agreement to limit access to groundwater north of the slough for irrigation, consumption, or use as a surface water source. The terms of the agreement will be reviewed as part of each DOE five-year review cycle under CERCLA.

Once the long-term groundwater monitoring program is established for this operable unit, long-term stewardship activities will be defined, as appropriate. DOE will be responsible for groundwater monitoring activities. Access agreements are in place between the Missouri Department of Conservation and DOE to allow long-term access to the quarry monitoring well network.

3.2.2 Estimated Long-Term Stewardship Costs for Quarry Groundwater

<i>Long-Term Stewardship Costs (Constant Year 2000 Dollars)</i>							
<i>FY 2000 - FY 2010</i>	<i>FY 2011 - FY 2020</i>	<i>FY 2021 - FY 2030</i>	<i>FY 2031 - FY 2040</i>	<i>FY 2041 - FY 2050</i>	<i>FY 2051 - FY 2060</i>	<i>FY 2061 - FY 2070</i>	<i>Estimated Total</i>
\$2,674,056	\$3,342,570	\$3,342,570	\$3,342,570	\$3,342,570	\$3,342,570	\$3,342,570	\$22,729,476

4.0 FUTURE USES

A 17-hectare (42-acre) disposal cell will remain onsite in the chemical plant area. The disposal cell is accessible to the public and there are no access restrictions, except for the leachate sump. The chemical plant site area that is not occupied by the disposal cell, or otherwise required to be retained by DOE to perform long-term stewardship activities, will be released, as appropriate, subject to future land use restrictions. Currently, DOE anticipates that future land use of the chemical plant site outside of the perimeter road will include a combination of open space, recreational, and controlled access areas. DOE anticipates that the quarry site could be released to a Federal or state agency for recreational use. Final decisions concerning the future uses of the Weldon Spring Site will be based on the CERCLA five-year review process and the long-term monitoring requirements for groundwater at the site.

For additional information about the Weldon Spring Site, please contact:

Thomas Pauling, Environmental Engineer
 U.S. Department of Energy, Weldon Spring Site Remedial Action Project
 7295 Highway 94 South
 St. Charles, MO, 63304
 Phone: 636-441-8978
 or visit the Internet website at <http://www.em.doe.gov/wssrap>

WESTLAKE DISPOSAL SITE¹

1.0 SITE SUMMARY

1.1 Site Description and Mission

The Westlake Disposal Site is located near the city of St. Louis, Missouri, along the floodplain of the Missouri River and adjacent to agricultural land. The 81-hectare (200-acre) site has been used since 1962 for disposing of municipal refuse, industrial solid and liquid wastes, and construction demolition debris.

SITE HIGHLIGHTS

Total Site Area - 81 hectares (200 acres)
Reason Not Subject to NDAA Requirements - DOE is not expected to be responsible for long-term stewardship at the site

From 1939 to 1985, limestone was quarried on the site. Beginning in 1962, portions of the property were used for disposing of solid and liquid industrial wastes, municipal refuse, and construction debris. In 1973, Cotter Corporation disposed of over 47,000 tons of uranium ore processing residues mixed with soil in two areas covering a total of 6 hectares (16 acres) of the site.

1.2 Site Cleanup and Accomplishments

Due to these past disposal practices, radioactive contaminants (e.g., uranium) have been found in the soil and in groundwater beneath the site. Potential contaminant pathways exist for people who come into direct contact with or ingest contaminated groundwater or soil.

In 1976, the Missouri Department of Natural Resources (MDNR) closed the unregulated landfill. Since that time, MDNR had issued several permits for various portions of the 200-acre site. In 1990, an operating sanitary landfill had a permitted area of 52 acres (21 hectares), and an operating demolition landfill had a permitted area of 22 acres (9 hectares).

After listing the site on U.S. Environmental Protection Agency's (EPA) National Priorities List, the EPA completed a preliminary study and determined that no immediate actions were necessary at the Westlake Disposal Site while site studies were underway. A radiological survey conducted for the Nuclear Regulatory Commission (NRC) in 1981 and 1982 documented radioactive wastes on site. Property adjacent to the landfill was investigated in 1990, which identified radiological contamination that migrated from the landfill. Results indicate that large volumes of uranium ore residues, probably originating from the Hazelwood, Missouri, Latty Avenue site (DOE-leased property), have been buried at the Westlake Disposal Site. Two areas of contamination, covering more than 6 hectares (15 acres) and located at depths of up to 6 meters (20 feet) below the present surface, have been identified. There is no indication that significant quantities of contaminants are moving offsite.

¹This report is developed in response to a Congressional request in the Fiscal Year (FY) 2000 National Defense Authorization Act (NDAA). As requested by the Act, this report addresses current and anticipated long-term stewardship activities at each site or portion of a site by the end of calendar year 2006 ("Conference Report on S.1059, National Defense Authorization Act for Fiscal Year 2000," *Congressional Record*, August 5, 1999).

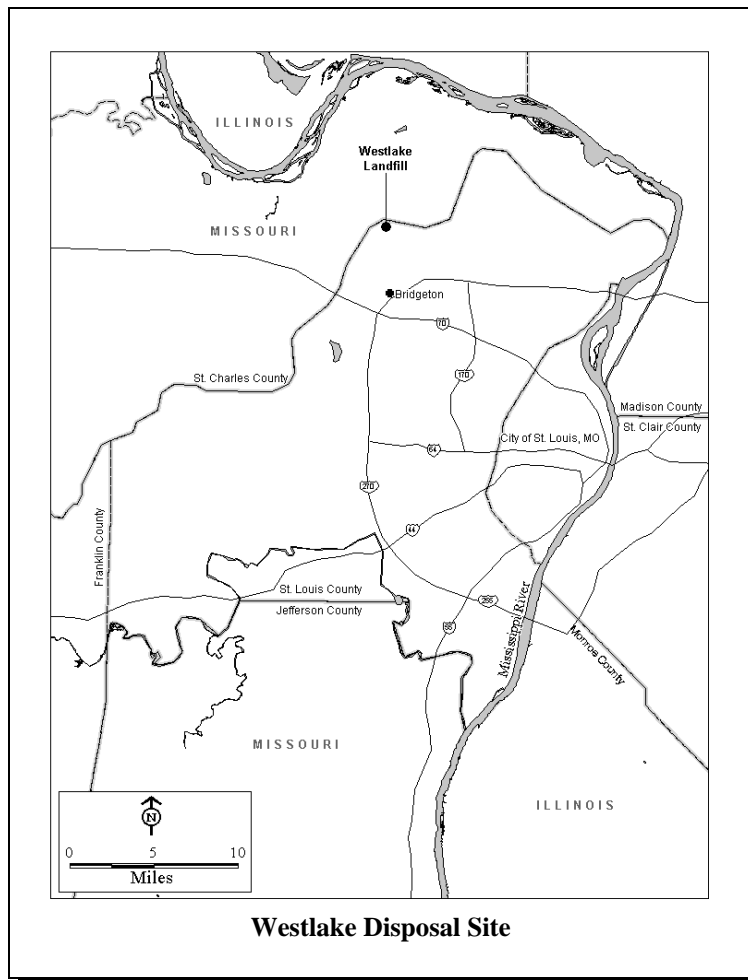
Based on current planning, the U.S. Department of Energy is not expected to be responsible for the long-term stewardship activities at the Westlake Disposal Site. However, since DOE sent waste to the disposal site and DOE was identified as a potentially responsible party, a description of the site and possible long-term stewardship responsibilities are included. (See Section 2.1.2 of Volume I).

at this time. However, in 1990, an estimated 60 people obtained drinking water from private wells within three miles of the site.

Studies are still being conducted to explore the nature and extent of contamination. The information will be used to identify the best cleanup strategy for the radiologic contaminants at the site and for the chemical contamination from the landfill.

2.0 EXPECTED FUTURE USES AND SITE RESPONSIBILITY

The Westlake Disposal Site is being addressed through Federal and potentially responsible parties' actions. It is possible that a portion of the radioactive waste disposed in the Westlake landfill was from the Latty Avenue Properties, a 4.6-hectare (11.6-acre), DOE-leased property used for interim storage of materials removed from vicinity properties. However, DOE's responsibility for both remediation and long-term stewardship activities as well as financial commitments have yet to be determined.



For additional information about the Westlake Disposal Site, please contact:

the Environmental Protection Agency's Internet website at
http://www.epa.gov/region07/programs/spfd/nplfacts/westlake_landfill.pdf